Calleguas Creek Watershed Toxicity TMDL

Staff Memorandum

Introduction

This Staff Memorandum presents the elements and implementation plan for the tentative Calleguas Creek Watershed Toxicity TMDL. This TMDL was developed through a collaborative, stakeholder-led process, which was responsible for the technical analyses leading to the Regional Board staff's recommended TMDL. This memorandum provides a brief overview of the TMDL development, and includes the TMDL elements and implementation plan, which the Board will consider adopting as Basin Plan amendments.

Background

This TMDL addresses water quality impairments of Calleguas Creek, including its tributaries, segments and Mugu Lagoon, caused by toxicity, sediment toxicity, and two organophosphate pesticides, chlorpyrifos and diazinon. Development of these TMDLs was mandated by the Consent Decree between Heal the Bay, et al. and US EPA (C 98 4825, 1999). In accordance with this Consent Decree, US EPA must approve or establish these TMDLs by March, 2006.

Calleguas Creek stakeholders have been actively engaged with US EPA and the Regional Board on a variety of watershed planning initiatives through the Calleguas Creek Watershed Management Plan (CCWMP), an established, stakeholder-lead watershed management group, operating since 1996. The CCWMP includes broad participation from Federal, State and County agencies, municipalities, POTWs, water purveyors, groundwater management agencies, and agricultural and environmental groups. As part of its mission to address issues of long-range comprehensive water resources, including land use, economic development, and open space preservation, the CCWMP proposed to the US EPA and Regional Board to take the lead on development of the TMDLs for the Calleguas Creek Watershed.

Margin of safety (MOS) determination

In addition to discussion during development of the Technical Report and comments received on the Technical Report and tentative Basin Plan Amendment, we relied upon two internal memos which represent arguments to include explict MOSs (USEPA) or to exclude explicit MOSs (LWA). Both these memos are attached to this Staff memo.

1. United States Environmental Protection Agency (USEPA)
2. Larry Walker Associates (LWA)

An explicit MOS of 5 or 10 percent is typically included with wasteload and load allocations due to the unavoidable uncertainty inherent in reducing the highly variable natural world to models and equations. In evaluating the issue, staff came to two conclusions 1) an explicit MOS can be not included for diazinon and for chlorpyrifos in the upper Calleguas reaches and 2) an explicit MOS must be included for chlorpyrifos in the lower Calleguas reaches.

Staff concluded that it was possible to not include an explicit MOS for diazinon and for chlorpyrifos in upper reaches because this TMDL is concentration based. Because the total contribution of chlorpyrifos and diazinon are a blend of all sources, and all sources will not be discharging at the target concentration simultaneously, the water column concentrations will remain below targets. However, this TMDL depends upon water column reductions to improve sediment quality, also. An area of substantial uncertainty remains in the relationship between water column chlorpyrifos and sediment or fish tissue chlorpyrifos. Calculations of probable chlorpyrifos transfer between the water column and sediment depend upon literature values and not upon data or analyses conducted in the Calleguas watershed. (Less uncertainty exists with diazinon since diazinon is much less sediment associated.) The lower Calleguas reaches are impaired for sediment toxicity which was shown in the Technical Report to be due to chlorpyrifos and for chlorpyrifos in fish tissue, therefore an explicit MOS has been included for chlorpyrifos for these reaches.

TMDL Development

The CCWMP worked with US EPA and Regional Board staff to define their respective scope of activities for the TMDL. The CCWMP, with partial funding from US EPA, engaged a contractor, Larry Walker Associates, to develop a workplan under which this TMDL was developed. The workplan was first submitted in to the Regional Board in March, 2003. Based on Regional Board staff review and comments, the workplan was revised in June, 2003 and approved in July, 2003. The workplan addressed the methods and schedule for watershed monitoring, source and linkage analysis, development of wasteload and load allocations, and the administrative structure through which stakeholders and the public were informed on TMDL development. Work commenced in October, 2003, with the submittal of the final TMDL report by Larry Walker Associates in January, 2005.

During the development of the TMDL reports, Regional Board staff worked with US EPA, the CCWMP and Larry Walker Associates staff on a frequent and regular basis. Outreach and stakeholder comments were solicited through the CCWMP structure, which included monthly steering committee meetings and several subcommittees, responsible for various aspects of watershed management. These meetings were open to the public; agendas and meeting minutes were also published on the CCWMP website: www.calleguascreek.org. In addition to these monthly meetings, the CCWMP, Regional Board and US EPA staff, and a representative from the City of Camarillo, Sanitation Department, met on a monthly basis to discuss TMDL issues. These meetings were

facilitated and noted by staff of the CCWMP, and several of these meetings were attended by representatives of the Calleguas Creek Watershed POTWs, Heal the Bay, and the Ventura County Coastkeeper. Finally, the CCWMP arranged and hosted a public meeting with invitations mailed to 3,000 persons in the watershed in January, 2005.

In addition to stakeholder and public involvement, the TMDL workplan also set forth a Technical Advisory Committee composed of independent reviewers from Universities and National Laboratories for technical review. The Technical Advisory Committee considered issues such as numeric targets, margin of safety, and load allocations. Comments from the Committee were addressed by Larry Walker Associates, and the record of communications, comments and responses were included as an appendix to the TMDL Report.

The development of the TMDL reports followed a process in which the CCWMP and LWA prepared draft documents for discussion. Regional Board and US EPA staff considered these approaches and in some instances provided alternative proposals. These alternative proposals were brought back to the CCWMP for consideration and the CCWMP provided direction to LWA staff on how to address the modifications. During development of the TMDL reports, differences between the US EPA, CCWMP, LWA and the Regional Board staff on technical and policy issues were carefully considered and the TMDL Technical reports include the compilation of input from all of these sources and represent the discussions and compromises of the stakeholder process. The language of the technical report attempts to capture some of the resolutions to the differences and reflects the unique nature of this process. For the margin of safety, Regional Board staff has determined that an explicit margin of safety is necessary for chlorpyrifos in certain reaches of Calleguas Creek to address uncertainties in the TMDL Technical report. In this instance, consensus has not yet been reached and a difference exists between the Regional Board tentative Basin Plan Amendment and the TMDL technical report.

Key Documents

Regional Board staff's tentative Basin Plan Amendment, including numeric targets, allocations, and implementation plan, is based on the work by the CCWMP and its contractor, Larry Walker Associates. Tables 7-16.1 and 17-16.2 contain the elements and implementation plan of the Toxicity TMDL. The TMDL Technical Report, "Calleguas Creek Watershed Toxicity, Chlorpyrifos and Diazinon TMDL," and its appendices, are attached. Records of meetings and communications are contained in the Administrative Record for this TMDL.